

08/01/06 223



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ATOM IC-1

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4 IMPROVED BREATHING REGULATOR APPARATUS
5 HAVING AUTOMATIC FLOW CONTROL

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ABSTRACT OF THE DISCLOSURE

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10 A second stage breathing regulator especially suited for use
11 in scuba diving, comprises an automatically adjustable air flow
12 deflector or vane to redirect a portion of inlet high velocity
13 air of a venturi-initiated vacuum assist-type regulator
14 configuration. At greater depths the flow vane increasingly
15 interrupts and redirects a selected portion of the air stream
16 to increase the venturi effect. As a result, the diver's
17 inhalation effort requirements can be relatively constant
18 throughout the breathing cycle at any depth or can be tailored
19 to a desired non-constant profile as a function of depth. A
20 piston responsive to ambient water pressure by extension
21 proportional to depth, places the flow vane to increasingly
22 redirect the air flow at greater depths thereby increasing the
23 venturi effect. The diver is thus freed of having to make
24 manual adjustments to the second stage under water.

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